CUMBERLAND COUNTY

Cancer Control and Prevention Capacity and Needs Assessment Report Summary

December 2004

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Notices:

Medicine is an ever-changing science. As new research and data broaden our knowledge, conclusions may change. The authors and reviewers have endeavored to check the sources of information and to utilize sources believed to be the most reliable in an effort to provide information that is as complete as possible at the time of submission and generally in accord with appropriate standards. However, in view of the possibility of human error or changes in medical science, this work cannot be warranted as being complete and accurate in every respect. Readers are encouraged to confirm the information contained herein with other sources. Information concerning some of the sources of data, rationale for its utilization, acknowledgements of specific parties contributing to these efforts, as well as links to cancer-related information may be found at www.umdnj.edu/evalcweb/.

This county-level Report Summary summarizes the larger county report, which is a baseline evaluation of this county, performed as part of the Capacity and Needs Assessment initiative of the New Jersey Comprehensive Cancer Control Plan (www.state.nj.us/health/ccp/ccc_plan.htm), under the direction of the New Jersey Department of Health and Senior Services (NJDHSS) Office of Cancer Control and Prevention (OCCP) (www.state.nj.us/health/ccp/), the University of Medicine and Dentistry of New Jersey (UMDNJ) (www.umdnj.edu/evalcweb/), and the Evaluation Committee of the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force Chair: Arnold Baskies, MD; Evaluation Committee Chair: Stanley H. Weiss, MD).

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Introduction

The Office of Cancer Control and Prevention (OCCP) of the New Jersey Department of Health and Senior Services (NJDHSS), in conjunction with the mandate from the Governor's Task Force on Cancer Prevention, Early Detection and Treatment in New Jersey (Task Force), is developing comprehensive capacity and needs assessment reports concerning cancer, individualized for each county in the state. This Report Summary highlights key findings in the Cumberland County report.[1].

The Task Force released New Jersey's Comprehensive Cancer Control Plan[2] (NJ-CCCP) in 2002. Each county was commissioned to develop a comprehensive capacity and needs and assessment report, as part of the initial implementation steps for the NJ-CCCP. The full report and this Report Summary were developed under the direction of the University of Medicine and Dentistry of New Jersey (UMDNJ) and the Evaluation Committee of the Task Force, in furtherance of the NJ-CCCP which can be found at: http://www.state.nj.us/health/ccp/ccc_plan.htm. This particular assessment was funded by the OCCP through the following New Jersey Cancer Education and Early Detection (NJCEED) county program in Cumberland County: Cumberland County NJCEED Program at South Jersey Healthcare Regional Cancer Center (SJHRCC).

The purpose of the capacity and needs assessment reports is to identify the major cancer issues affecting each county and the county's available resources, or lack thereof, for cancer prevention, screening, and treatment, and to propose recommendations for improvement. The Cumberland County Cancer Capacity and Needs Assessment Report analyzes the population demographics and the cancer incidence and mortality rates and distribution of stage at diagnosis for the seven priority cancers of the NJ-CCCP (breast, cervical, colorectal, lung, oral, melanoma, and prostate), as well as the current resources available, in the county. These data guided the development of evidence-based recommendations and interventions to address cancer control priorities at local and state levels.

Method of Preparing the Cumberland County Cancer Capacity and Needs Assessment

In early 2003, the Cumberland County NJCEED program director contracted with a consultant to be the County Evaluator for the project of completing the cancer capacity and needs assessment. The consultant carried out key informant interviews and two surveys of OB-GYN practices and primary care physician practices during 2003 (see Appendices E and F of the full report). By March 8, 2004, the process of collecting information for the Cancer Resources Database of New Jersey (CRDNJ) was completed. In addition, the New Jersey State Cancer Registry supplied incidence and stage of diagnosis data (1996–2000) for Cumberland County.

Reducing the Cancer Burden

The goal of the NJ-CCCP is to reduce the burden of cancer for all New Jersey residents. Many types or forms of cancer can be prevented. It is important to provide the state's residents with the information they need to avoid risky behaviors that increase their chances of developing cancer. Other cancers can be detected early and treated, controlled, or cured. Data about these kinds of cancer and the potential to survive them once detected must be disseminated broadly. Access to high-quality cancer screening and state-of-the-art treatment must be available. Finally, even for cancers for which a cure has not been found, there are certain life-prolonging, life-enhancing, and palliative care measures, including pain control, to which residents deserve access. These are the aims of the NJ-CCCP and will, once achieved, reduce the burden of cancer in New Jersey.

Section 1 – County Demographic Profile

Cumberland County is located in the southwestern portion of the state along the Delaware Bay. It stretches across 677 square miles of rich farmland, vast wetlands, and undisturbed natural habitation along the Bay. It is bordered by Salem County to the north and Atlantic and Cape May counties to the east. The county had a population of 146,438 according to the 2000 Census, which represented 1.7% of the state population.[3,a] There are 14 townships, boroughs, and municipalities in the county, with the largest city being Vineland City (population 56,271), and the smallest being Shiloh Borough (population 534). The county is a multifaceted community of diverse ethnic groups and industry. Highlights of Cumberland County demographics are presented below.

- Blacks represented 20% of the county population in 2000 (compared to 14% of the state population). The black population in Cumberland has grown by 27% since 1990. The three largest municipalities – Vineland, Bridgeton, and Millville – house 72% of the black population. In 1999, one in four blacks in the county (26%) lived below the federal poverty level (19% statewide), compared to 10% of the county's white residents.[b]
- Hispanic residents represented 19% of the county population in 2000 (compared to 13% statewide).[c] The Hispanic population in Cumberland County has grown by 52% since 1990. Six of Cumberland County's municipalities house 97% of the county's total Hispanic population: Vineland (where Hispanics represent 30% of the municipality's total population), Bridgeton (24%), Millville (11%), Maurice River (9.2%), Fairfield (8.9%), and Upper Deerfield (4.5%). Cumberland County's rapidly growing Hispanic population provides much of the county's farm labor.
- In Cumberland County, 66% of the Hispanic population is Puerto Rican, concentrated primarily in the city of Vineland, which is surrounded by farms. Since 1990, 5,395 persons have moved to Vineland, many of whom are of Puerto Rican ethnicity.[4]

[a] In general, percentages in this report are rounded to two digits.
[b] All figures for poverty, income, and employment are from the 2000 Census, but refer to the year 1999.
[c] Hispanics and non-Hispanics may be of any race. Racial categories include both Hispanics and non-Hispanics.

- Mexican residents represent 18% of the county's Hispanic population, many of whom live in the city of Bridgeton and work on nearby farms. A total of 3,451 persons have moved to Bridgeton since 1990; many of these new arrivals are of Mexican ethnicity.
- In Cumberland County, 28% of Hispanic residents had incomes below the federal poverty level in 1999; this was the highest percentage among groups for which separate data were available. Many fewer non-Hispanic whites in Cumberland County (8.4%) had incomes below the federal poverty level. In New Jersey, only 18% of the Hispanic population was living below the poverty level.
- American Indian and Asian ethnicities each represent 1% of the total county population.[d]
- In Cumberland County, the two age groups comprising persons 40 to 54 years old and persons 75 years and over increased by the highest percentages between 1990 and 2000.
- Persons aged 50 years and over represents 28% of the county population.
- Persons aged 65 years and over represents 13% of the county population.
- The City of Vineland alone, the largest municipality in the county (home to 38% of the county's total population) contains 42% of the county's population aged 65 and over. The combined populations of residents aged 65 and over in Bridgeton City, Millville City, Upper Deerfield Township, and Hopewell Township represent another 42% of the county population 65 and over.
- Among the county's population over five years of age, 20% speak a language other than English. Of the languages spoken, Spanish is the most common (spoken by 17% of the total population).
- Compared to New Jersey as a whole, a higher percentage of Cumberland County's residents live below the federal poverty level (8.5% for the state versus 15% for the county). In 12 of the county's 14 municipalities, 10% or more of the residents in at least one of the following categories live below the poverty line: all ages; related children under the age of 18 years; adults aged 65+; or families. Bridgeton City has the highest percentages of residents living below the poverty level: one-third of related children under 18 (33.3%); 27% of residents of all ages; 23% of families; and 18% of adults aged 65 years and older.
- There are one federal penitentiary and three state correctional facilities in Cumberland County, including South Wood State Prison, New Jersey Department of Correction's largest facility. Combined, there are over 8,000 inmates incarcerated in these facilities.[5]

[d] These and other minority groups raise special issues related to culture, language, and access to health care. Although there are concerns that minority groups may bear disproportionate portions of the cancer burden, the limited numbers lead to their omission from many sources of statistical data. Thus, precise numbers and rates are not readily available and are not portrayed explicitly.

Section 2 – Overview of Overarching Issues

Cumberland County does not have a comprehensive cancer control plan such as the NJ-CCCP. However, the strength of partnerships through different coalitions and other collaborative efforts is undeniable, especially in the area of health-related issues. Healthcare practitioners/facilities and public health organizations benefit immensely from their collaborations with charitable assistance programs, volunteer organizations, faith-based organizations, ethnic/cultural organizations, local media, and interested civic organizations willing to work together to improve cancer care in the county. These partnerships provide each party with a mutually beneficial product utilizing resource-sharing and mutual goals. Yet, while some organized coalition and collaboration activity does address the cancer needs of the county's residents, more needs to be done in order to broaden the scope of cancer prevention, early detection, and care available for Cumberland County residents.

Detailed information regarding cancer screening, education, advocacy, treatment, palliation, and other activities has been collected to identify resources currently available in Cumberland County. This information was included in the statewide Cancer Resource Database of New Jersey (CRDNJ).[6] Over 380 agencies, worksites, organizations, health care institutions, faith-based groups, schools, and health programs participated in the 2003–2004 CRDNJ survey. A summary of information reported by the participants who sent in the 401 CRDNJ forms is presented below (Table 1).

Table 1. Summary of the Responses to 2003 CRDNJ in Cumberland County

Facility or Activity Type	Total Number of CRDNJ Forms from Participants
Total	**401**
Activities	
Hospital/Cancer Center	13
Health Department	3
Other	3
Employer	59
Faith-Based Organization	211
Gastroenterologist	1
Health Department	2
Hematology/Oncology	2
Hospital	2
Non-Profit	6
Obstetrician/Gynecologist	11
Palliative Care	2
Primary Care Provider	5
Radiology/Imaging	3
School	
Public, Kindergarten through Grade 12	57
Public, College	2
Private	12
Don't Know	4
Specialist, Other	2
Surgical Center	1

Source: CRDNJ, June 14, 2004

In addition to assessing existing health-related policies, a survey was administered to larger businesses in the county regarding worksite practices that affect cancer prevention and education. A written survey was mailed to 58 employers with more than 100 employees, of which eight employers responded. In addition, all seven employers with more than 1,000 employees were successfully contacted for a telephone survey. Findings that have a bearing upon cancer prevention and/or education are highlighted below.

- All written survey respondents indicated that they have a clean indoor air policy.
- The American Cancer Society offers on-site smoking cessation programs to employers with a monetary incentive for the employer. Cumberland County Health Department administered a grant that offered this service to 20 Cumberland County employers. When the grant expired on September 1, 2003, none of the employers had accepted the offered service.
- Respondents from all worksites where the potential for chemical exposure exists indicated that the Occupational Safety and Health Administration (OSHA) regulations for employee education are followed.

- All but one interviewee/respondent confirmed that their work does not involve sun exposure. Although many Cumberland County employers operate farms, their employees thus exposed to the sun, only one such employer responded. This respondent admitted that sun exposure is routine, and sun-safe education is not offered. Although employers and the general public may perceive melanoma risk to be low among farm workers, many of whom are Hispanic with relatively dark skin color, general sun-safe education would benefit all populations. Further, many of the employers for occupations involving outdoor work (e.g., construction and fishing) were not surveyed, since the sample included only firms employing over 100 employees.
- All respondents indicated that they offer health insurance, which covers primary care and cancer screening services, for full-time employees. Many employers are part-year agricultural operations; this may negatively affect insurance coverage for full-time workers. The extent of insurance coverage for part-time workers and for smaller employers is not known at this time.

Section 3 – Cancer Burden

All incidence[7] and mortality[8] rates cited herein are per 100,000 and age-adjusted to the 2000 U.S. population standard[9]. All county and state rates are average annual rates during 1996–2000. For simplicity, the 1996–2000 average annual age-adjusted incidence or mortality rate hereinafter will be abbreviated and referred to as incidence or mortality rate, respectively. The reason the five-year average has been routinely used is that the small number of cases in a single year leads to statistical variations that are not generally meaningful. For U.S. incidence rates, 1999 or 2000 rates were used. Unless otherwise specified, all rates are for invasive cancer only.

Cancer is the second leading cause of death in the county and the state, with an average of 320 deaths in Cumberland County per year during the period 1996–2000.[8,10]

Incidence Rates for All Cancer Sites

The incidence rates of cancer (all sites and all ages) were 576.5 new cases of cancer per 100,000 males and 440.2 per 100,000 females (Table 2). Both of these rates were lower than the corresponding state rates for men and women. Males had higher incidence rates for all cancer sites combined than did females in the county. The following table shows the incidence rates for all cancer sites combined for men and women in Cumberland County and New Jersey. As shown in Table 2, there is a pattern of inequality among minority groups in Cumberland County.

- During the period 1996–2000, black men in Cumberland County, as in New Jersey overall, had much higher rates of cancer incidence than did white men. Overall (all sites, all ages), black men had an incidence rate of 714.8 per 100,000 compared to white men who had a rate of 566.5 per 100.000. The incidence rate for all cancers combined among Hispanic men was 485.9 per 100.000.[e]

[e] Hispanics and non-Hispanics may be of any race. Racial categories include both Hispanics and non-Hispanics. Some tables include summaries for white and black race and for Hispanic ethnicity. Data on non-Hispanics is not

- The incidence rate for all cancers combined for Hispanic women in Cumberland County was 432.5 per 100,000, nearly as high as that for all women (440.2). This pattern is quite different from the pattern observed in the state as a whole, where Hispanic women had a much lower overall cancer incidence rate (363.8 per 100,000) than all women (453.7).

Table 2. Age-Adjusted Incidence Rates per 100,000 for All Cancer Sites Combined[7] in Cumberland County and New Jersey, 1996–2000

		All Races	White	Black	Hispanic Ethnicity*
Cumberland County	Male	576.5	566.5	714.8	485.9
	Females	440.2	455.3	381.5	432.5
New Jersey	Males	628.7	625.2	716.5	539.1
	Females	453.7	464.9	414.2	363.8

* Hispanics may be of any race; therefore, the categories of race and ethnicity are not mutually exclusive.

Highlights of important findings regarding incidence rates in Cumberland County for the seven NJ-CCCP priority cancers for the period 1996–2000 are presented below.

- Incidence rates for cancer increase dramatically with age in Cumberland County, as elsewhere. For example, the incidence rate per 100,000 for breast cancer in the county increased from 143.0 for women aged 40 to 49 years to 278.8 for women aged 50 to 64 years, and again to 407.6 for women aged 65 to 74 years. A similar trend was found in the incidence rate per 100,000 for prostate cancer in Cumberland County men, which increased from 242.0 for men aged 50 to 64 years to 939.0 for men aged 65–74 years.
- The three cancer sites with the highest incidence rates in Cumberland County were prostate cancer in men (154.7 per 100,000), breast cancer in women (125.6 per 100,000), and lung cancer in men (105.3 per 100,000).

Mortality Rates for All Cancer Sites

During the period 1996–2000, the death rate for all cancer sites combined (all ages) in Cumberland County was 265.3 per 100,000 males and 187.7 per 100,000 females, which were similar to the corresponding state rates (261.1 per 100,000 males and 181.6 per 100,000 females).[8] Table 3 below shows a disparity in cancer death rates between the black and white populations. Black males had a 38% higher mortality rate than did white males in the county, which is similar to the statewide pattern. Black females in the county had a mortality rate similar to white females, despite having a 16% lower incidence rate than white females.

Mortality rates among Hispanic males and females in Cumberland County were among the highest in New Jersey. This pattern is particularly significant in this county where persons identifying themselves as Hispanic constitute 19% of the population. The mortality rate among

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available. Comparisons of Hispanic rates with rates for the whole population may underestimate the difference between Hispanics and non-Hispanics because Hispanics are included in the total population.

Hispanic males in Cumberland County was 16% higher than the corresponding state rate and 71% higher among Hispanic females in Cumberland County.

Table 3. Age-Adjusted Mortality Rates per 100,000 for All Cancer Sites Combined[8] in Cumberland County and New Jersey, 1996–2000

		All Races	White	Black	Hispanic Ethnicity*
Cumberland County	Male	265.3	257.0	354.5	174.5
	Females	187.7	187.1	183.3	158.0
New Jersey	Males	261.1	256.5	349.4	150.0
	Females	181.6	182.0	202.8	92.6

* Hispanics may be of any race; therefore, the categories of race and ethnicity are not mutually exclusive.

Top Cancer Sites in Cumberland County – Prostate, Breast, Lung, and Colorectal Cancer

For men in Cumberland County, prostate cancer was the cancer with the highest incidence rate, followed by lung cancer and colorectal cancer (Table 4). For women in Cumberland County, breast cancer was the cancer with the highest incidence rate, followed by lung cancer and colorectal cancer (Table 5). For most cancers, as well as for lung and colorectal cancer specifically, incidence and mortality rates of cancer were higher among males than females.

Table 4. Most Common Cancer Diagnoses in Men in Cumberland County, 1996–2000

	Prostate Cancer			Lung Cancer		Colorectal Cancer		
	Incidence Rate[7]	Regional/ Distant Stage at Diagnosis[7]	Death Rate[8]	Incidence Rate[7]	Death Rate[8]	Incidence Rate[7]	Regional/ Distant Stage at Diagnosis[7]	Death Rate[8]
Total Men	154.7	14.5%	29.9	105.0	80.2	81.6	46.9%	32.0
White	145.4	13.2%	26.5	103.1	77.1	79.9	45.3%	32.2
Black	241.8	20.7%	69.1	136.3	107.3	100.1	62.2%	35.9
Hispanic	151.8	13.9%	-	58.2	50.9	51.2	61.6%	-

Rates are per 100,000 population, age adjusted to 2000 standard population.
- Statistic not displayed due to fewer than 5 cases in the category.

Table 5. Most Common Cancer Diagnoses in Women in Cumberland County, 1996–2000

	Breast Cancer			Lung Cancer		Colorectal Cancer		
	Incidence Rate[7]	Regional/ Distant Stage at Diagnosis[7]	Death Rate[8]	Incidence Rate[7]	Death Rate[8]	Incidence Rate[7]	Regional/ Distant Stage at Diagnosis[7]	Death Rate[8]
Total Women	125.6	31.6%	27.1	56.0	45.9	53.8	52.0%	21.7
White	130.5	30.3%	24.5	56.8	46.8	57.7	53.0%	21.6
Black	108.3	41.3%	41.9	53.6	41.5	32.5	36.9%	20.7
Hispanic	119.8	34.2%	-	33.3	-	17.5	66.7%	-

Rates are per 100,000 population, age adjusted to 2000 standard population.
- Statistic not displayed due to fewer than 5 cases in the category.

Highlights of all seven NJ-CCCP priority cancers are presented in Table 6 below.

Table 6. Summary Table
Selected[a] Age-Adjusted[b] Cumberland County Cancer Statistics, 1996–2000[c]

	Estimated Prevalence[d]	Incidence per 100,000[e]	Mortality per 100,000[e]
All Cancers,[f] Cumberland County			
Male	2,016	576.5	265.3
Female	3,174	440.2	187.7
NJ-CCCP Priority Cancer by Gender			
Breast, female	1,138	125.6	27.1
Cervical, female	207	***16.8***	***4.1***
Colorectal, male	273	81.6	32.0
Colorectal, female	363	53.8	21.7
Lung, male	94	***105.0***	80.2
Lung, female	102	56.0	45.7
Melanoma, male	80	11.8	3.0
Melanoma, female	88	6.6	***3.2***
Oral/Oropharyngeal, male	66	15.5	4.2
Oral/Oropharyngeal, female	42	5.9	***2.0***
Prostate, male	707	154.7	29.9

[a] Based upon the NJ-CCCP.
[b] Age-adjusted to 2000 U.S. Census population standards. Age-adjustment is used to describe rates in which statistical procedures have been applied to remove the effect of differences in composition (specifically, variations in age distribution) of the various populations. This is important in order to portray an accurate picture of the burden of cancer, since cancer is known to disproportionately affect persons of differing ages.
[c] Rates are average annual rates during the time period 1996 through 2000.
[d] Prevalence is the measurement of burden of disease in the population at a particular point in time. Within this report, it represents the number of people alive who have ever been diagnosed with the disease. Prevalence figures given here are rough theoretical estimates, based on a number of assumptions, and computed by applying national prevalence-to-incidence ratios to Cumberland County's average annual crude incidence counts for the five years 1996–2000, separately for each gender. Actual prevalence is likely to be of the same order of magnitude as the estimate.[11]
[e] Incidence and mortality are gender-specific, age-adjusted annual rates, not counts. A rate at least 10% higher than the corresponding state rate is shown in bold italics.
[f] "All cancers" represents the sum of all invasive cancer during the time period, not just the seven cancers presented in detail below.

Cancer Burden by Site

Breast Cancer

White women in Cumberland County had the highest rate of breast cancer incidence for the years 1996–2000 (130.5 per 100,000). Although white women had the highest breast cancer incidence rate of any racial group, black women in the county had a much higher mortality rate (41.9 per 100,000) compared to white women (24.5). A higher percentage of breast cancer cases were diagnosed in the regional and distant stages of the disease among black women (41%) than

among white women (30%). Women whose breast cancers are diagnosed in the late stages tend to have poor treatment outcomes.

Risk of breast cancer mortality can be reduced through the regular use of mammography.[2] Among 3,923 New Jersey women aged 50 and over who were interviewed from 2000 through 2002, 78% reported having had a mammogram within the past two years.[12,13] Based on interviews of 70 women in Cumberland County, the county rate was significantly higher than the state rate.[13] Within the county, the screening rate increased significantly during the period 1992–2002, as it did in the state overall.[13] Based on *Healthy New Jersey 2010* baseline data, 59% of black women received a clinical breast examination and a mammogram within the past two years, compared to 67% of white women, suggesting that breast cancer mammography screening rates need to improve among black women.[14]

Cervical Cancer

Cervical cancer is a highly preventable and curable disease if detected early. The Papanicolaou ("Pap") test, introduced in the 1940s, detects some precancerous as well cancerous lesions, and is covered by most private and public health insurance. Some companies have moved to cover a more sensitive and specific screening test, the AutoPap, which uses a thin preparation of cells along with computer-assisted technology.[2] Human papillomavirus (HPV), a sexually transmitted disease, is the most significant risk factor for developing cervical cancer; recommendations for the incorporation of HPV testing[f] as part of a routine pelvic examination have been developed by the American College of Obstetricians and Gynecologists.[2,15]

To overcome socioeconomic barriers such as linguistic isolation, poverty, and cultural barriers, special programs to identify women at high risk for cervical cancer earlier in the disease process are required. *The Healthy New Jersey 2010* target for Pap tests (to reach 75% of women over 65 years of age and 85% of women 18–64 years of age) should be one of the targets for Cumberland County programs for women's health, particularly for the NJCEED program, which provides free screening to eligible women.[g] Among 7,689 New Jersey women with no history of hysterectomy who were interviewed from 2000 through 2002, 83% reported having had a Pap smear within the past three years.[12,13] Based on interviews of 97 women in Cumberland County, the county rate did not differ significantly from the state rate.[13] However, during the period 1992–2002, the screening rate in Cumberland County was significantly lower than the state rate.[13]

The incidence rate of cervical cancer among women of all races and ages in Cumberland County (16.8 per 100,000) was 54% higher than the corresponding state rate (10.9). Cervical cancer incidence rates among Cumberland County women in different age groups were also much higher than the corresponding state rates. The highest incidence rates in Cumberland County occurred among women aged 40 to 49 and 50 to 64 years, which were 72% and 78% higher than

[f] For example, the ViraPap™ will detect which strains of HPV DNA, if any, are present.
[g] Eligible women include women who are uninsured or underinsured with incomes below 250% of the federal poverty level.

the state rates for the same two groups, respectively.[h] Hispanic women in the county had a high incidence rate of cervical cancer (21.8 per 100,000). County-level incidence rates among white women and black women were 17.6 and 14.8 per 100,000, respectively.

The cervical cancer mortality rate in Cumberland County was 4.1 per 100,000, 32% higher than the state rate (3.1). Due to the small number of cervical cancer deaths in the county, it was not possible to perform more detailed analyses for specific race/ethnic populations.

Colorectal Cancer

Men in Cumberland County had a colorectal cancer incidence rate of 81.6 per 100,000; this rate was higher than the rate for all New Jersey men (79.0). By far, black men had the highest colorectal cancer incidence rate (100.1 new cases per 100,000 population). Women in Cumberland County had a lower colorectal cancer incidence rate compared to women in the state or the nation overall.

The colorectal cancer mortality rate among men in Cumberland County was 32.0 per 100,000; this rate was higher than the corresponding state (29.5) and national (25.8) rates. Among women in Cumberland County, the colorectal cancer mortality rate was 21.7; this rate was also higher than the corresponding rates among women in New Jersey (20.1) and in the U.S. (18.0).

As with many cancers, colorectal cancer incidence rates increase with age. The colorectal cancer incidence rate in Cumberland County increased from 13.2 per 100,000 among men aged 40 to 49 years to 125.0 among men aged 50 to 64 years to 385.8 among men aged 65 to 74 years and increased again to 562.9 among men aged 75 years and over. A similar pattern was observed among women.[i] Specific outreach efforts for colorectal cancer screening should continue to focus on men and women aged 50 years and over. Education to emphasize the importance of screening and early detection should not be limited to this age group, but should be focused on all adults. Treatment is most effective among individuals whose colorectal cancers are diagnosed in the early stages; however, only 41% of cases among men and 36% of cases among women in New Jersey are diagnosed during the early stages.

There are currently four recommended screening options for colorectal cancer including colonoscopy. It is recommended that colonoscopy be performed every ten years. This technique can treat early cancers by facilitating removal of polyps. Among 4,961 New Jersey adults aged 50 and over who were interviewed from 2001 through 2002, 56% reported having had colorectal cancer screening (either a fecal occult blood test within the past year or a sigmoidoscopy or colonoscopy ever).[12,13] Based on interviews of 97 adults in Cumberland County, the county rate did not differ significantly from the state rate.[13]

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[h] The cervical cancer incidence rates per 100,000 for women aged 40 to 49 years were 31.2 in the county and 18.1 in the state, and among women aged 50 to 64 years were 33.1 in the county and 18.6 in the state.

[i] The colorectal cancer incidence rate in Cumberland County increased from 23.0 among women aged 40 to 49 years to 79.5 among women aged 50 to 64 years to 262.8 among women aged 65 to 74 years and to 338.2 among women aged 75 and over.

Lung Cancer

In Cumberland County, the lung cancer death rate was 80.2 per 100,000 among men; this rate was 7% higher than the corresponding state rate (74.8). The lung cancer death rate among Cumberland County women was 45.7 per 100,000; this rate was 10% higher than the corresponding state rate (41.6). The lung cancer death rate per 100,000 for white men (77.1) was much higher than that for white women in Cumberland County (46.8); similar patterns were observed for the state and the nation. Black men had a death rate due to lung cancer (107.3) that was 39% higher than that for white men.

Cumberland County lung cancer incidence rates exceeded the corresponding state rates for all age and gender groups with the exception of women aged 65 and over. Lung cancer incidence rates in the county were markedly higher among individuals aged 50 and above.

Due to the lack of effective screening methods to detect lung cancer at an early stage and the limited efficacy of treatment for advanced lung cancer, lung cancer survival is of shorter duration than for many other cancers. An estimated 87% of lung cancer cases are attributed to tobacco smoking.[2] The Consumer Health Profile for Cumberland County prepared by the National Cancer Institute's (NCI's) Atlantic Region Cancer Information Service (CIS) estimates that 80,837 residents (74% of Cumberland County's adult population) are medically underserved and are in need of smoking cessation programs.[j,16] The increase in lung cancer incidence with age indicates that age is a relevant factor, with implications for the long-term effects of smoking on disease rates. Thus, the goal should be to reduce the occurrence of new lung cancer cases. Preventing young people from initiating smoking and providing effective smoking cessation programs for all ages, races, and socioeconomic levels should be major priorities for preventing lung cancer in Cumberland County. Exposure to environmental tobacco smoke (ETS), or "second-hand" smoke, remains an additional important issue.[17]

Melanoma

Melanoma is responsible for about three-fourths of all deaths from skin cancer. Exposure to ultraviolet (UV) light is the primary causal agent.[2] The effect of UV light on the skin is cumulative over the years, and the risk of skin cancer increases with each sunburn. Persons of all races who are exposed to the sun without proper protective cover are at risk. Caucasian populations have a far greater risk because of their light skin color and because a number of them

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[j] Consumer Health Profile maps of each New Jersey county were provided in June 2003 to the NJDHSS and UMDNJ and each county by the National Cancer Institute's Atlantic Region Cancer Information Service, along with ongoing technical support. (More information can be obtained from: 1-800-4-CANCER.) The medically underserved refers to individuals who lack access to primary care either because they are socioeconomically disadvantaged and may or may not live in areas with high poverty rates or because they reside in rural areas. The term also refers to individuals that reside in geographic areas where the Index of Medical Underservice (IMU) is 62 or less. The IMU is a weighted score derived from four variables: the ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of population below the federal poverty level, and the percentage of the population aged 65 years and older. The data categorize the U.S. population into 62 groups based upon characteristics such as geography, demographics, lifestyle, and socioeconomic status. Within these 62 groups, 30 are classified as medically underserved.

sunbathe. The incidence rate of melanoma rises with age. In Cumberland County, the incidence rate of melanoma among men aged 50 to 64 years was 13.9 per 100,000 and increased to 31.5 among men aged 65 to 74 years. Among women in Cumberland County, the incidence rate increased from 9.3 per 100,000 for those aged 50 to 64 years to 31.9 for those aged 65 to 74 years. The melanoma mortality rate among women was 41% higher in the county (3.1 per 100,000) than in the state (2.2).

Oral and Oropharyngeal Cancer

In Cumberland County, the oral and oropharyngeal cancer incidence rate among men (15.5 per 100,000) was similar to the corresponding rate in New Jersey (15.7). The oral and oropharyngeal cancer incidence rate was slightly lower among Cumberland County women (5.9) compared to women in the state overall (6.4). Although the number of oral and oropharyngeal cancer deaths in Cumberland County was small, the county mortality rate among women (2.0 per 100,000) was higher than the state rate (1.6).

Smoking and high consumption of alcohol are two major risk factors for oral and oropharyngeal cancer. Raising awareness and providing education to all adults, dentists, and healthcare providers are two essential steps to increasing early detection of oral and oropharyngeal cancer.

Prostate Cancer

While prostate cancer was the most common cancer diagnosis among men in Cumberland County during the period 1996–2000, the incidence rate for all ages and all races (154.7 per 100,000) was lower than the corresponding state rate (194.3). In Cumberland County, the incidence rate of prostate cancer among black men (241.8 per 100,000) was much higher than the rate among white men (145.4).

The prostate cancer mortality rate was lower in Cumberland County (29.9 per 100,000) than in either New Jersey (32.9) or the U.S. (32.9). However, the prostate cancer mortality rate among black men in Cumberland County (68.9 per 100,000) was similar to the corresponding state rate (68.8) and was more than double the rate among white men in Cumberland County (26.5).

The major cancer societies and relevant professional organizations have not come to a consensus on screening guidelines for prostate cancer. Counseling for men at high risk, such as black men and all men with a family history of prostate cancer at an early age, is critical for encouraging appropriate screening. The American Urological Association and the American Cancer Society recommend that physicians should routinely present screening options for early detection and offer the prostate-specific antigen (PSA) blood test and digital rectum examination (DRE) to high-risk men, beginning at age 40 or 45.[18,19]

Other Cancer Sites/Issues

HIV/AIDS. The human immunodeficiency virus (HIV) is the etiologic agent of the acquired immunodeficiency syndrome (AIDS) and is associated with the development of several specific cancers.[2] As of June 30, 2003, Cumberland County had the 14th highest prevalence of known

HIV infection in New Jersey (412 persons living, known to be HIV positive).[k,20] Both healthcare providers and patients need to understand the risks associated with HIV/AIDS.

Bladder Cancer. Although bladder cancer is not one of the seven priority cancers in the NJ-CCCP, the increasing number of bladder cancer cases over the past decade is a concern for New Jersey. New Jersey's bladder cancer incidence rates are higher than the corresponding national rates for all race and ethnic categories.[21] Mortality due to bladder cancer is higher in New Jersey than in the nation overall. The American Cancer Society estimated that bladder cancer would be the 6th most common cause of cancer mortality in the U.S. and 5th most common cause in New Jersey in 2003.[22] For Cumberland County, incidence and mortality rates were similar to or lower than the corresponding state rates.

Characteristics of the Populations of Focus for Reducing Cancer Burden

1. Cancer incidence and mortality rates for both men and women increase with age. Cumberland County has 19,087 citizens aged 65 and over (40% men and 60% women), representing 13% of the county's population. The two municipalities with the largest populations of seniors are Vineland City (7,976) and Millville City (3,460).
2. Because they are disproportionately medically underserved, blacks and Hispanics merit special attention. Cumberland County's population is 20% black and 19% Hispanic. Six of Cumberland County's municipalities (Bridgeton, Fairfield, Maurice River, Millville, Upper Deerfield, and Vineland) possess 97% (26,988) of the county's total Hispanic population.
3. The largest number of new cancer cases occurs among the county's white population, which comprises 66% of Cumberland County's population.

Table 7. Average Annual Number of New Cancer Cases* Diagnosed in Cumberland County by Race during 1996–2000**[7]

	White	Black	Other Races	All
Male	304	54	4	362
Female	316	40	4	360
Total	620	94	8	722

* Includes all invasive cancer, not just the seven NJ-CCCP priority cancers.
** Hispanics may be of any race.

4. There are over 8,000 inmates in four prisons in Cumberland County. Appropriate cancer screening services are lacking for inmates, as is education upon release.

[k] Includes persons living with AIDS who may not have been tested for HIV. As the total does not include persons living with HIV who have not been tested, the totals include only an unknown portion of total infections.

Analysis of the Causes of Cancer Burden

1. The Consumer Health Profiles from the NCI estimate that 108,553 residents of Cumberland County (74% of the total population) are medically underserved. This means that nearly three out of four residents in the county lack consistent healthcare services and preventive health exams, cancer screening services, and/or counseling and education concerning health-related lifestyle behaviors. It is estimated that 80,837 residents are in need of smoking prevention and cessation programs; 68,000 persons are at high risk of sunburn, a risk factor for melanoma; and 16,000 residents are at high risk for cancer because of chronic severe drinking behaviors. Obesity and lack of regular exercise are two general life style issues that are related to higher rates of cancer. According to the Behavioral Risk Factor Surveillance System (BRFSS) data, 37% of New Jersey adults were overweight, and an additional 19% were obese in 2002.[12]
2. Lack of health insurance is a major barrier to accessing healthcare in Cumberland County that can delay or prevent appropriate cancer screening and treatment.
3. Key informant interviews conducted in connection with this capacity and needs assessment revealed that providers and patient have a deficient understanding of available cancer prevention education and screening services covered by Medicaid. There is no published enrollee or provider advice regarding coverage for cancer prevention services for Medicaid providers.
4. There is a lack of health education materials and programs related to sun-safe behaviors and smoking cessation provided by worksites in Cumberland County.
5. The NJCEED program is only partially funded (funding supplied for only 18% of the eligible population for breast and cervical cancer screening). Funding constraints mean that cancer screening is provided only to those in greatest need, the uninsured or underinsured with incomes below 250% of the poverty level. Based on a National Academy of Sciences, Institute of Medicine study, the uninsured are less likely than those with health insurance to receive health screening and are less likely to receive screening as often as it is recommended, which may in turn lead to delayed diagnosis and premature death.[23] Thus, the lack of funding to provide cancer screening for the uninsured adds to the county's cancer burden.[23]

Section 4 – Discussion, Analysis, and Recommendations

The first recommendation is that Cumberland County cancer coalitions and programs follow the NJ-CCCP goals, objectives, and strategies to the extent possible in their implementation of activities and services for cancer care, especially concerning the top four cancers (prostate, breast, lung, and colorectal). County/local-level and statewide priorities are recommended below for the seven priority cancers and reference the related NJ-CCCP goals using the following codes: Prostate Cancer (PR), Breast Cancer (BR), Lung Cancer (LU), Colorectal Cancer (CO), Cervical Cancer (CE), Melanoma (ME), and Oral Cancer (OR). In addition, the NJ-CCCP goals with respect to overarching issues, including Access and Resources (AC), Palliation (PA), Nutrition and Physical Activity (NP), and Advocacy (AD), are referenced. Referencing the NJ-

CCCP codes allows the cancer coalition and county health departments to see where these initial county recommendations are in line with the statewide objectives and strategies of the NJ-CCCP.

The NJ-CCCP has four basic guiding steps for implementing cancer prevention, screening, education, and control efforts in Cumberland County:

- Awareness and education for cancer prevention (BR-1.2, CO-1.1, LU-1.1, PR-1.1, and AC-2.1).
- Increased outreach efforts to educate residents and healthcare professionals about cancer screening, early detection, and treatment (BR-1.1, BR-1.3, BR-1.4, BR-3.1-2, CO-1.2, CO-1.3, LU-2.1-2, LU-4.1, PR-2.1, PR-2.2, PR-4.1, AC-2.1, AC-4.2, AC-4.3, PA-1.1).
- Support for holistic and comprehensive cancer treatment, including participation in clinical trials (BR-2.1, BR-2.2, BR-5.1, CO-2.1, CO-3.1-2, LU-3.1, PR-3.1, PR-5.2, AC-1.1-2, NP-3.1-2, AC-4.1, AD-3.1, PA-2.1-4).
- Addressing issues within the health system that are implicated in the reasons for health disparities (BR-4.1-2, CO-2.1, LU goals 4–6, PR-5.1, PR-5.3, AD-3.1, AC-1.1, AC-1.2, AC-3.1, and AC-4.1-3).

Recommendations for Local and County Priorities

Recommendations for primary care providers are based on a preliminary survey of 11 providers. Though additional research on the extent of cancer education and screening services provided by physicians and dentists in Cumberland County is needed, the results of the preliminary survey are the basis for these local-level recommendations. (See Section 3, subsection F. of the full report.[1])

- Cumberland County physicians and dentists should be offered an opportunity to develop proficiency in assessing tobacco treatment needs and in prescribing anti-smoking medications. A prescribing guide and patient education materials should be made available to them and they should be given a resource to contact for developing expertise in this area. (AC-4.2 and 3, PA-1.1, NP-3.1. LU-1.1, LU-2.1-3).
- Cumberland County physicians should be offered education and support to establish tracking systems for the following screening and re-screening guidelines and for providing timely follow-up of positive results for breast, cervical, colorectal, oral, prostate cancers, and melanoma (AC-4.2-3, PA-1.1, NP-3.1, BR-3.1-2, CE-3.1, CE-4.1-2, CO-1.3, LU-1.1, LU-2.1-3, OR-3.1, OR-3.2, OR-3.3, PR-3.1, PR-4.1-2).
- In partnership with the County Department of Planning and Development, worksites should be strongly encouraged (via County Planning and Development funding) to partner with health education programs, smoking cessation, and cancer screening services – such as those available through South Jersey Healthcare Occupational Health – to offer on-site guidance and health promotion events in their facilities. Employers should be surveyed to determine the risk of sun and environmental exposure potential and to determine the proportion of employees without health insurance. Screening services should be offered during convenient times for employees (AC-2.1, AC-3.1, AC-4.1, AD-2.1, NP-1.1-4, NP-2.1-2, ME-1.2, ME-4.1, ME-5.1).

- PTAs and local school boards should promote legislation to improve specific cancer topic presentation in the core curriculum. These entities should monitor health educators to ensure that they are carrying out the core curriculum topics related to cancer prevention. State legislators should introduce bills to improve the public school core curriculum for health permanently. The state should change the public school core curriculum so that it provides detailed messages about the risk of HPV infection, safe sex, barrier methods, and screening for cervical cancer. School curricula should specify messages to be taught about risk reduction for oral cancer, lung cancer, and bladder cancer, and the relationship of smoking and alcohol abuse to various cancers. Specific messages about breast cancer risk and screening and melanoma risk should be detailed in the curriculum. Mandated instruction on breast self-exam and testicular self-exam need to be implemented. Students should be instructed to share cancer health promotion messages with the adults in their homes (LU-1.1, NP-1.1-2, NP-2.1-2, BR-1.4, CE-2.1, ME-2.1, ME-3.1, ME-6.1).
- Initiatives should be developed to improve early disease detection among immigrants and to introduce these individuals to health promotion topics when they first arrive in the county and when they receive medical care (BR-4.1-2, CO-2.1, LU goals 4–6, PR-5.1, PR-5.3, AD-3.1, AC-1.1, AC-1.2, AC-3.1 AC-4.1-3).

Recommendations for Statewide Priorities

- Given Cumberland County's lung, oral, and bladder cancer burden, the New Jersey Department of Health and Senior Services should consider pilot testing free smoking cessation treatment including medication in Cumberland County to those meeting financial criteria (e.g., NJCEED eligibility criteria) on an ongoing basis. Free treatment should include over-the-counter nicotine replacement therapy, which is not covered by health insurance (LU-1.1, LU-2.1-2, LU-3.1, LU-4.1, LU-5.1, LU-6.1).
- Smoking cessation services should be offered to minors through the public schools and to adults through vocational or evening school programs. Current rules prohibiting the dispensing of medication to minors in school should be waived, with parental and physician consent for smoking cessation treatment (LU-1.1, LU-2.1-2).
- The state should make adult exercise and nutrition education programs more widely available through the Rutgers Cooperative Extension and through adult evening programs offered at all public elementary and high schools (NP-1.3, NP-2.1, NP-2.2).
- The New Jersey Department of Health and Senior Services, in cooperation with the Commissioner of Insurance, should require that health insurers build in incentives for healthcare professionals to perform routine cancer prevention and early detection activities and tests. Measurable wellness interventions (e.g., counseling clients to stop smoking and receive alcoholism treatment and to have breast, cervical, colorectal, and prostate cancer screening) should be required for those seeking third-party reimbursement, particularly state Medicaid and Medicaid Managed Care program participants. Individuals would receive wellness interventions at the time of program enrollment and at recommended intervals (AC-4.1-3, AD-1.1-2, AD-2.1-3, AD-3.1).
- The New Jersey Department of Health and Senior Services, in cooperation with the Commissioner of Insurance, should require that health insurers, particularly HMOs

participating in state Medicaid programs, cover payment for smoking cessation program participation and pharmaceutical smoking cessation aids, including over-the-counter nicotine replacement therapy. Medicaid should pay for smoking cessation program participation (AC-4.1-3, AD-1.1-2, AD-2.1-3, AD-3.1).

- Medicaid providers and Medicaid HMO providers should be required to offer initial visit wellness screenings and referrals, and Medicaid should reimburse providers for this one-time expanded service (NP-1.1-4, NP-2.1-2, NP-3.1-2, AC-4.1-3, AD-1.1-2, AD-2.1-3, AD-3.1).

Closing Remarks

The Cancer Capacity and Needs Assessment provides a detailed baseline assessment for Cumberland County. The data, interpretations, and recommendations were developed to provide a wide array of public health and medical personnel with standardized information and detailed analysis that can help guide and focus their efforts at the county level, including such local health initiatives as the forthcoming Community Health Improvement Plans. The reports from all of the counties will collectively inform the continuing comprehensive cancer control efforts of the Office of Cancer Control and Prevention of the New Jersey Department of Health and Senior Services; the Governor's Task Force on Cancer Prevention Early Detection and Treatment in New Jersey; and the University of Medicine and Dentistry of New Jersey.

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